CLAIMS

What is claimed is:

1. A radio frequency receiver coil adapted to be extended from a catheter, said coil comprising a flexible printed wiring board comprising:

a first end of said flexible printed wiring board extending from an opening in said catheter;

a second end of said flexible printed wiring board extending from said opening in said catheter; and

a connection external to said catheter joining said first end to said second end to form a loop.

2. The coil in claim 1, wherein said flexible printed wiring board has a flat ribbon shape.

3. The coil in claim 1, wherein said first end is more flexible than said second end.

4 The coil in claim 3, wherein the relative flexibility of said first end with respect to said second end causes said first end to take the shape of a round arc when extended from said catheter.

5. The coil in claim 1, further comprising control rods connected to said first end and said second end, wherein said control rods are independently moveable.

6. The coil in claim 1, wherein said flexible printed wiring board includes capacitors adjacent said second end.

7. The coil in claim 1, further comprising insulator sections on said flexible printed wiring board, wherein said insulator sections define the shape of said loop.

8. A radio frequency receiver coil adapted to be extended from a catheter, said coil comprising a flexible printed wiring board comprising:

a first end of said flexible printed wiring board extending from an opening in said catheter;

a second end of said flexible printed wiring board extending from said opening in said catheter;

a connection external to said catheter joining said first end to said second end to form a loop; and

shielding circuitry on said flexible printed wiring board.

9. The coil in claim 8, wherein said shielding circuitry comprises a Faraday shield.

10. The coil in claim 8, wherein said first end is more flexible than said second end.

11. The coil in claim 10, wherein the relative flexibility of said first end with respect to said second end causes said first end to take the shape of a round arc when extended from said catheter.

12. The coil in claim 8, further comprising control rods connected to said first end and said second end, wherein said control rods are independently moveable.

13. The coil in claim 8, wherein said flexible printed wiring board includes capacitors adjacent said second end.

14. The coil in claim 8, further comprising insulator sections on said flexible printed wiring board, wherein said insulator sections define the shape of said loop.

15. A method of manufacturing a radio frequency receiver coil, said method comprising:

forming a flexible printed wiring board;

connecting ends of said flexible printed wiring board together;

connecting control rods to said flexible printed wiring board, wherein said control rods are independently moveable;

positioning said flexible printed wiring board within a catheter such that the ends of said flexible printed wiring board extend from the opening of said catheter; and

moving said control rods to extend a first end of said flexible printed wiring board further out of said opening than a second end of said flexible printed wiring board such that the portion of said flexible printed wiring board outside said opening forms a loop.

16. The method in claim 15, wherein said flexible printed wiring board has a flat ribbon shape.

17. The method in claim 15, wherein said first end is more flexible than said second end.

18. The method in claim 17, wherein the relative flexibility of said first end with respect to said second end causes said first end to take the shape of a round arc when said first end is extended further out of said opening than said second end.

19. The method in claim 15, wherein said process of forming said flexible printed wiring board includes forming capacitors adjacent said second end.

20. The method in claim 15, further comprising forming insulator sections on said flexible printed wiring board, wherein said insulator sections define the shape of said loop.

21. A method of manufacturing a radio frequency receiver coil, said method comprising:

forming a flexible printed wiring board;

forming shielding circuitry on said flexible printed wiring board;

connecting ends of said flexible printed wiring board together;

connecting control rods to said flexible printed wiring board, wherein said control rods are independently moveable;

positioning said flexible printed wiring board within a catheter such that the ends of said flexible printed wiring board extend from the opening of said catheter; and

moving said control rods to extend a first end of said flexible printed wiring board further out of said opening than a second end of said flexible printed wiring board such that the portion of said flexible printed wiring board outside said opening forms a loop.

22. The method in claim 21, wherein said shielding circuitry comprises a Faraday shield.

23. The method in claim 21, wherein said flexible printed wiring board has a flat ribbon shape.

24. The method in claim 21, wherein said first end is more flexible than said second end.

25. The method in claim 24, wherein the relative flexibility of said first end with respect to said second end causes said first end to take the shape of a round arc when said first end is extended further out of said opening than said second end.

26. The method in claim 21, wherein said process of forming said flexible printed wiring board includes forming capacitors adjacent said second end.

27. The method in claim 21, further comprising forming insulator sections on said flexible printed wiring board, wherein said insulator sections define the shape of said loop.

28. A catheter comprising:

an enclosed section having an opening;

a radio frequency receiver coil adapted to be extended from said opening of said catheter, said coil comprising a flexible printed wiring board comprising:

a first end of said flexible printed wiring board extending from an opening in said catheter;

a second end of said flexible printed wiring board extending from said opening in said catheter; and

a connection external to said catheter joining said first end to said second end to form a loop.

29. The catheter in claim 28, wherein said flexible printed wiring board has a flat ribbon shape.

30. The catheter in claim 28, wherein said first end is more flexible than said second end.

31. The catheter in claim 30, wherein the relative flexibility of said first end with respect to said second end causes said first end to take the shape of a round arc when extended from said catheter.

32. The catheter in claim 28, further comprising control rods connected to said first end and said second end, wherein said control rods are independently moveable.

33. The catheter in claim 28, wherein said flexible printed wiring board includes capacitors adjacent said second end.

34. The catheter in claim 28, further comprising insulator sections on said flexible printed wiring board, wherein said insulator sections define the shape of said loop.

35. A catheter comprising:

an enclosed section having an opening;

a radio frequency receiver coil adapted to be extended from said opening of said catheter, said coil comprising a flexible printed wiring board comprising:

a first end of said flexible printed wiring board extending from an opening in said catheter;

a second end of said flexible printed wiring board extending from said opening in said catheter;

a connection external to said catheter joining said first end to said second end to form a loop; and

shielding circuitry on said flexible printed wiring board.

36. The catheter in claim 35, wherein said shielding circuitry comprises a Faraday shield.

37. The catheter in claim 35, wherein said first end is more flexible than said second end.

38. The catheter in claim 37, wherein the relative flexibility of said first end with respect to said second end causes said first end to take the shape of a round arc when extended from said catheter.

39. The catheter in claim 35, further comprising control rods connected to said first end and said second end, wherein said control rods are independently moveable.

40. The catheter in claim 35, wherein said flexible printed wiring board includes capacitors adjacent said second end.

41. The catheter in claim 35, further comprising insulator sections on said flexible printed wiring board, wherein said insulator sections define the shape of said loop.

42. A method of performing magnetic resonance imaging (MRI), said method comprising:

inserting a catheter into an item, such that an opening at one end of said catheter is positioned within said item;

inserting a radio frequency coil comprising a flexible printed wiring board into said item through said catheter;

moving a first control rod to extend a first end of said flexible printed wiring board further out of said opening than a second end of said flexible printed wiring board, such that the portion of said flexible printed wiring board outside said opening forms a loop;

generating a radio frequency signal outside said item; and

sensing said radio frequency signal using said radio frequency coil.

43. The method in claim 42, wherein said flexible printed wiring board has a flat ribbon shape.

44. The method in claim 42, wherein said first end is more flexible than said second end.

45. The method in claim 44, wherein the relative flexibility of said first end with respect to said second end causes said first end to take the shape of a round arc when said first end is extended further out of said opening than said second end.

46. The method in claim 42, wherein said flexible printed wiring board includes capacitors adjacent said second end.

47. The method in claim 42, wherein insulator sections on said flexible printed wiring board define the shape of said loop.